

# PHD1/prolyl hydroxylase Rabbit mAb

Catalog # AP76779

## Product Information

|                   |                        |
|-------------------|------------------------|
| Application       | WB, IHC-P, FC          |
| Primary Accession | <a href="#">Q96KS0</a> |
| Reactivity        | Rat, Human, Mouse      |
| Host              | Rabbit                 |
| Clonality         | Monoclonal Antibody    |
| Isotype           | IgG                    |
| Conjugate         | Unconjugated           |
| Purification      | Affinity Purified      |
| Calculated MW     | 43650                  |

## Additional Information

|             |                                                                                                 |
|-------------|-------------------------------------------------------------------------------------------------|
| Gene ID     | 112398                                                                                          |
| Other Names | EGLN2                                                                                           |
| Dilution    | WB~~1:1000 IHC-P~~N/A FC~~1:10~50                                                               |
| Format      | Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA. |
| Storage     | Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.        |

## Protein Information

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| Name     | EGLN2 ( <a href="#">HGNC:14660</a> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Function | <p>Prolyl hydroxylase that mediates hydroxylation of proline residues in target proteins, such as ATF4, IKBKB, CEP192 and HIF1A (PubMed:<a href="#">11595184</a>, PubMed:<a href="#">12039559</a>, PubMed:<a href="#">15925519</a>, PubMed:<a href="#">16509823</a>, PubMed:<a href="#">17114296</a>, PubMed:<a href="#">23932902</a>). Target proteins are preferentially recognized via a LXXLAP motif (PubMed:<a href="#">11595184</a>, PubMed:<a href="#">12039559</a>, PubMed:<a href="#">15925519</a>). Cellular oxygen sensor that catalyzes, under normoxic conditions, the post-translational formation of 4-hydroxyproline in hypoxia-inducible factor (HIF) alpha proteins (PubMed:<a href="#">11595184</a>, PubMed:<a href="#">12039559</a>, PubMed:<a href="#">12181324</a>, PubMed:<a href="#">15925519</a>, PubMed:<a href="#">19339211</a>). Hydroxylates a specific proline found in each of the oxygen-dependent degradation (ODD) domains (N-terminal, NODD, and C-terminal, CODD) of HIF1A (PubMed:<a href="#">11595184</a>, PubMed:<a href="#">12039559</a>, PubMed:<a href="#">12181324</a>, PubMed:<a href="#">15925519</a>). Also hydroxylates HIF2A (PubMed:<a href="#">11595184</a>, PubMed:<a href="#">12039559</a>, PubMed:<a href="#">15925519</a>). Has a preference for the CODD site for both HIF1A and HIF2A (PubMed:<a href="#">11595184</a>,</p> |

PubMed:[12039559](#), PubMed:[15925519](#)). Hydroxylated HIFs are then targeted for proteasomal degradation via the von Hippel-Lindau ubiquitination complex (PubMed:[11595184](#), PubMed:[12039559](#), PubMed:[15925519](#)). Under hypoxic conditions, the hydroxylation reaction is attenuated allowing HIFs to escape degradation resulting in their translocation to the nucleus, heterodimerization with HIF1B, and increased expression of hypoxia-inducible genes (PubMed:[11595184](#), PubMed:[12039559](#), PubMed:[15925519](#)). EGLN2 is involved in regulating hypoxia tolerance and apoptosis in cardiac and skeletal muscle (PubMed:[11595184](#), PubMed:[12039559](#), PubMed:[15925519](#)). Also regulates susceptibility to normoxic oxidative neuronal death (PubMed:[11595184](#), PubMed:[12039559](#), PubMed:[15925519](#)). Links oxygen sensing to cell cycle and primary cilia formation by hydroxylating the critical centrosome component CEP192 which promotes its ubiquitination and subsequent proteasomal degradation (PubMed:[23932902](#)). Hydroxylates IKBKB, mediating NF-kappa-B activation in hypoxic conditions (PubMed:[17114296](#)). Also mediates hydroxylation of ATF4, leading to decreased protein stability of ATF4 (By similarity).

**Cellular Location**

Nucleus

**Tissue Location**

Expressed in adult and fetal heart, brain, liver, lung, skeletal muscle, and kidney. Also expressed in testis and placenta. Highest levels in adult brain, placenta, lung, kidney, and testis. Expressed in hormone responsive tissues, including normal and cancerous mammary, ovarian and prostate epithelium

## Background

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Cellular oxygen sensor that catalyzes, under normoxic conditions, the post-translational formation of 4-hydroxyproline in hypoxia-inducible factor (HIF) alpha proteins. Hydroxylates a specific proline found in each of the oxygen-dependent degradation (ODD) domains (N-terminal, NODD, and C-terminal, CODD) of HIF1A. Also hydroxylates HIF2A. Has a preference for the CODD site for both HIF1A and HIF2A. Hydroxylated HIFs are then targeted for proteasomal degradation via the von Hippel-Lindau ubiquitination complex.

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